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BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

[REDACTED] EXAMINER

MULLINS, BURTON S

[REDACTED] ART UNIT

[REDACTED] PAPER NUMBER

2834

DATE MAILED: 12/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/986,729

Applicant(s)

HUANG ET AL.

Examiner

Burton S. Mullins

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

1) Responsive to communication(s) filed on \_\_\_\_\_.  
 2a) This action is FINAL.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_ is/are allowed.  
 6) Claim(s) 1-20 is/are rejected.  
 7) Claim(s) \_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 11) The proposed drawing correction filed on \_\_\_\_ is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.  
 12) The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.  
 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) The translation of the foreign language provisional application has been received.  
 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.

4) Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Drawings*

2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application.

The objection to the drawings will not be held in abeyance.

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the shaft (claims 1 and 12) must be shown or the feature(s) canceled from the claim(s). The "cut corner" and "gap" in the first and second inner teeth (claims 9, 11, 18 and 20) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

4. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Specification*

5. The disclosure is objected to because of the following informalities: Numerous errors of grammar and syntax appear throughout the specification. For example, on p.8, line 11, "may

extending" is improper and on p.8, line 15 "self-inner teeth" is not clear. Applicant is requested to review the disclosure and make appropriate corrections.

***Claim Objections***

6. Claims 1-20 are objected to because of the following informalities: Change "form" to -from---. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

7. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 1 and 12, "a shift, coupled to said stator" should presumably be ---a shaft, coupled to said stator---. In claims 1 and 12, recitation "said second coil seat formed on the first coil seat" is vague and indefinite. Does this mean the first and second coil seats are connected or abut one another? Further, it is not clear how the "shaft" is coupled to the stator. Does the shaft abut the inner stator poles 130/230 (Fig.2a)? In claims 8 and 17, recitation "a post consisting of said first coil seat and said second coil seat" is vague and indefinite since it is not clear how the first and second coil seats form a "post".

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1-8, 10-17 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US 5,945,765) in view of Miyazawa et al. (US 6,166,470). Chen teaches a miniature motor structure, comprising a stator 2, further comprising: a first coil seat 4, including a first bottom plate 40, a plurality of first outer teeth 45, a plurality of first inner teeth 43; a coil 3, formed in the first coil seat; a second coil seat 5, including a second bottom plate 50, a plurality of second outer teeth 55, a plurality of second inner teeth 53, said second coil seat formed on the first coil seat, each of said second outer teeth 55 interposed between said adjacent first outer teeth 45, each of said second inner teeth 53 interposed between said adjacent first inner teeth 43; and a shaft 61, coupled to said stator (Fig.5).

Chen differs only in that the rotor 6 (Fig.5) surrounding the stator does not comprise a "circular magnet" per se.

Mizayawa teaches a brushless motor with an inner stator and outer rotor including ring or "circular" magnet 5 (Figs.1-2). The magnet 5 operates together with the energized stator poles to produce torque.

It would have been obvious to one having ordinary skill in the art to provide a circular magnet per Mizayawa on the rotor of Chen since the magnet rotor would have been necessary to produce motor torque.

Regarding claims 2-3, note first and second "central openings" 41 and 51 in Chen which the respective teeth 43 and 53 surround (Fig.3).

Regarding claims 5 and 14, the first and second coil seats are made of silicon steel in Chen (c.2, line 12).

Regarding claims 6 and 15, the coil 3 is positioned in a space defined by the first and second coil seats (Fig.3).

Regarding claims 7-8 and 16-17, the coil 3 in Chen is inherently preformed and is "wound around a post consisting of said first coil seat and said second coil seat" (Fig.3).

Regarding claims 10-11 and 19-20, the first inner teeth and said second inner teeth in both Chen and Miyazawa each comprise an arc, with a circumferential gap between the first and second inner teeth 43 and 53 (Fig.3).

10. Claims 9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen and Miyazawa as applied to claims 1 and 12 above, and further in view of Hasebe (US 4,899,075). As best understood, Chen and Miyazawa do not disclose a "cut corner" on the first and second inner teeth.

Hasebe teaches a DC brushless motor with a permanent magnet and stator poles having a "cut corner". Each salient pole has a notched portion in one corner (Fig.3). This prevents the phase angle position of the zero torque level with respect to the fundamental wave torque

from coinciding with the zero torque level of the second higher harmonic, and thus starting of the motor becomes easy (c.4, lines 30-40).

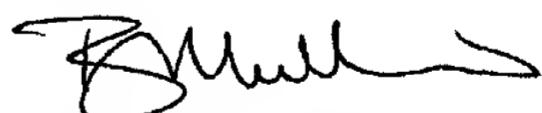
It would have been obvious to one having ordinary skill at the time of the invention to modify Chen and Miyazawa and provide notched poles with "cut corners" per Hasebe since this would improve starting of the motor.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Komatsu teaches notched stator poles, e.g. Fig.25.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 305-7063. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 305-1341 for regular communications and 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0956.

  
Burton S. Mullins  
Primary Examiner  
Art Unit 2834

bsm

December 10, 2002